

U.S.C. §103(a). Reconsideration of the claim rejections is requested in view of the above amendments and the following remarks.

A. 35 U.S.C. §102(e): Rejection of Claims 8-9, 12-13, 15-16 & 19-20

In the parent application, the Patent Office rejected claims 8-9, 12-13, 15-16 and 19-20 under 35 U.S.C. §102(e) as anticipated by U.S. Patent No. 5,964,810 issued to Gardner et al. (Gardner). With reference to Figure 3D, the Patent Office noted that Gardner discloses a multi-layered gate dielectric formed directly on a substrate. First dielectric layer 303 is silicon nitride and second dielectric layer 305 is BST. With reference to the embodiment shown in Figure 2A-2C, Gardner describes the thickness of a single gate insulating layer 203 in the range from 100 to 3,000 Å. Col. 4, lines 2-3. Gardner recognizes that these thicknesses are substantially thicker than SiO<sub>2</sub> gate oxide thicknesses, but notes that the equivalent SiO<sub>2</sub> thickness of insulating layer 203 can be less than an SiO<sub>2</sub> gate insulating layer. Col. 4, lines 3-8. An example is given of 1,000 Å of a PST oxide having a dielectric constant of about 3,000 equivalent to 1.4 Å of SiO<sub>2</sub> having a dielectric constant of 4.2. Col. 4, lines 5-9. Gardner does not relate its gate dielectric thickness to gate lengths.

Independent claim 8 is not anticipated by Gardner, because Gardner does not describe a gate dielectric related to gate electrode lengths. Claim 8, as amended, states that the thickness of the gate dielectric is less than one-third a length of the gate electrode with an equivalent dielectric constant.

For the above stated reasons, claim 8 is not anticipated by Gardner. Claims 9, 12 and 13 depend from claim 8 and therefore contain all the limitations of that claim. For the reasons stated with respect to claim 8, claims 9, 12 and 13 are not anticipated by Gardner.

Claim 15 also describes a gate dielectric having a thickness less than one-third a length of a gate electrode with a dielectric constant related to a gate dielectric constant of a silicon dioxide film. Claims 16, 19 and 20 depend from claim 15 and therefore contain all the limitations of that claim. Claims 15-16 and 19-20 are not anticipated by Gardner, because Gardner does not relate a gate dielectric thickness to a gate electrode length.

For the reasons stated above, Applicant asserts that claims 8-9, 12-13, 15-16 and 19-20 are not anticipated by Gardner.

B. 35 U.S.C. §103(a): Rejection of Claims 10-11 & 17-18

In the parent application, the Patent Office rejected claims 10-11 and 17-18 under 35 U.S.C. §103(a) as obvious over Gardner in view of U.S. Patent No. 4,015,281 issued to Nagata et al. (Nagata). Nagata is cited for disclosing an equation regarding effective oxide thickness. Applicant notes, however, that Nagata, according to Applicant's understanding, Nagata only addresses isolation of adjacent devices.

The rejected claims depend from claim 8 and claim 15, respectively. Thus, such claims contain all the limitations of the respective independent claims. Claims 10-11 and 17-18 are not obvious over the cited references, because the references do not disclose or provide any motivation for a thickness of the gate dielectric less than one-third length of a corresponding gate electrode.

For the above stated reasons, Applicant asserts that claims 10-11 and 17-18 are not obvious in view of Gardner and Nagata.



C. 35 U.S.C. §103(a): Rejection of Claims 14 & 21

In the parent application, the Patent Office rejected claims 14 and 21 as obvious over Gardner in view of U.S. Patent No. 5,258,654 issued to Sato (Sato). Sato is cited for teaching a triple layered gate dielectric. Sato does not describe a relationship between the thickness of its multi-layered gate dielectric and a length of the gate electrode.

Claims 14 and 21 depend from claims 8 and 15, respectively, and therefore contain all the limitations of that claim. For the reasons stated with respect to claims 8 and 15, claims 14 and 21 are not obvious over Gardner and Sato.

#### CONCLUSION

In view of the foregoing, it is believed that all claims now pending patentably define the subject invention over the prior art of record and are in condition for allowance and such action is earnestly solicited at the earliest possible date.

Respectfully submitted,

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